## Assumptions:

- \* Streamflows were adjusted to the January Final Water Supply Forecast and shaped 59 different ways based on observed historical runoff.
- \* Starting Elevations were actual Dec 31 observed data.
- \* Hungry Horse operates to VARQ while meeting minimum flows at Columbia Falls, targets full in June, and drafts to 3540 ft by 31 Aug.
- \* Brownlee operates to flood control elevations.
- \* Dworshak targets full in June, releases a maximum of 13,000 cfs in July August for LWG and targets 1520 ft by 31 Aug.
- \* Libby operates on minimum flow or VARQ flood control Dec Mar releases flow for sturgeon and bull trout in May and June, targets full in July, and drafts to 2439 ft by 31 Aug.
- \*  $\underline{\textbf{Alternative 1:}} \ \, \textbf{Targets April 10 Flood control at Grand Coulee and meets 65 kcfs at Vernita Bar (Jan-Mar)}$
- \* Alternative 2: Meets 125 kcfs Jan-Mar for chum and targets April 10 Flood control at Grand Coulee

## Results:

Priest Rapids Meets Flow Objectives of 70 kcfs Jan - Apr1 and 135 kcfs Apr2 - Jun:

| Alternative 1 (Apr 10) | Alternative 2 ( | Chum |
|------------------------|-----------------|------|
|------------------------|-----------------|------|

| Month  | Occurrences out | Average Flow for | Occurrences out | Average Flow for |
|--------|-----------------|------------------|-----------------|------------------|
| Within | of 59 Years     | 59 Years (kcfs)  | of 59 Years     | 59 Years (kcfs)  |
| Jan    | 54              | 78               | 59              | 86               |
| Feb    | 19              | 68               | 45              | 77               |
| Mar    | 24              | 69               | 39              | 73               |
| Apr1   | 38              | 93               | 22              | 65               |
| Apr2   | 15              | 114              | 8               | 104              |
| May    | 50              | 148              | 48              | 147              |
| Jun    | 38              | 112              | 36              | 112              |

Lower Granite Meets Flow Objectives of 85 kcfs in Apr - May, 73.3 kcfs in June and 50 kcfs in Jul - Aug:

Alternative 1 (Apr 10) Alternative 2 (Chum)

| internative 1 (ripi 10) |                 |                  | micinative 2 (Chain) |                  |  |
|-------------------------|-----------------|------------------|----------------------|------------------|--|
| Month                   | Occurrences out | Average Flow for | Occurrences out      | Average Flow for |  |
|                         | of 59 Years     | 59 Years (kcfs)  | of 59 Years          | 59 Years (kcfs)  |  |
| Apr2                    | 4               | 60               | 4                    | 60               |  |
| May                     | 38              | 92               | 38                   | 92               |  |
| Jun                     | 33              | 76               | 33                   | 76               |  |
| Jul                     | 8               | 42               | 8                    | 42               |  |
| Aug1                    | 0               | 32               | 0                    | 32               |  |
| Aug2                    | 0               | 23               | 0                    | 23               |  |

McNary Meets Flow Objectives of 220 kcfs in Apr2 - Jun and 200 kcfs in Jul - Aug:

Alternative 1 (Apr 10)

Alternative 2 (Chum)

| Month | Occurrences out | Average Flow for | Occurrences out | Average Flow for |
|-------|-----------------|------------------|-----------------|------------------|
| Month | of 59 Years     | 59 Years (kcfs)  | of 59 Years     | 59 Years (kcfs)  |
| Apr2  | 5               | 170              | 4               | 161              |
| May   | 59              | 230              | 57              | 229              |
| Jun   | 17              | 209              | 17              | 208              |
| Jul   | 1               | 151              | 1               | 151              |
| Aug1  | 0               | 142              | 0               | 142              |
| Aug2  | 0               | 128              | 0               | 128              |

Bonneville Meets Flow Objectives of 125 kcfs in Jan - Apr:

Alternative 1 (Apr 10)

Alternative 2 (Chum)

| Month | Occurrences out | Average Flow for | Occurrences out | Average Flow for |
|-------|-----------------|------------------|-----------------|------------------|
|       | of 59 Years     | 59 Years (kcfs)  | of 59 Years     | 59 Years (kcfs)  |
| Jan   | 22              | 123              | 59              | 130              |
| Feb   | 13              | 117              | 55              | 127              |
| Mar   | 21              | 123              | 22              | 127              |
| Apr1  | 52              | 163              | 32              | 134              |
| Apr2  | 56              | 191              | 53              | 181              |

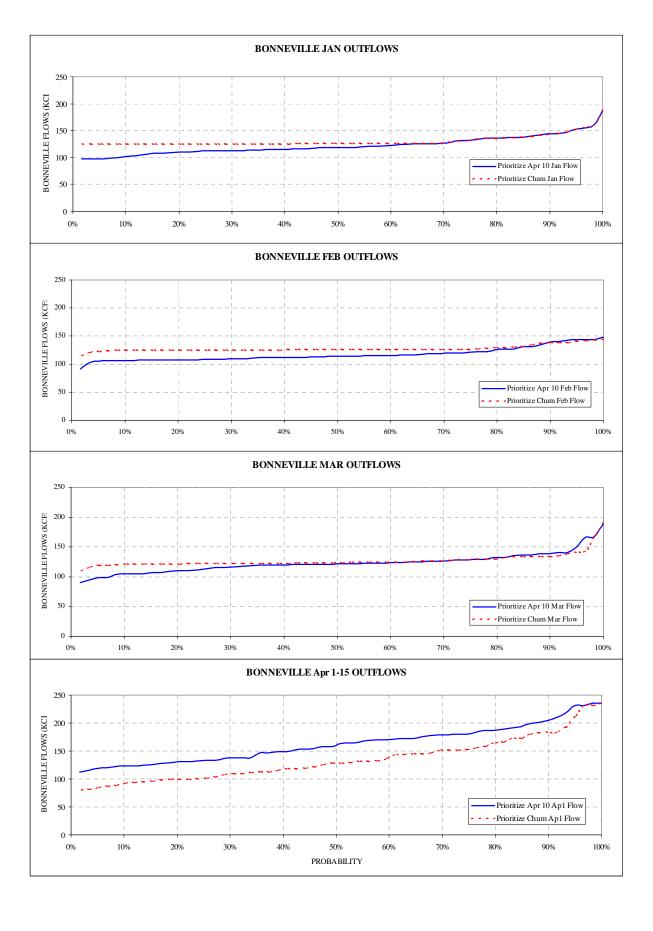
Projects Refill by 30 June:

Alternative 1 (Apr 10)

Alternative 2 (Chum)

|              | 1 HICH HULLY                | mittinuti                                      | C 2 (Chuin)                    |  |
|--------------|-----------------------------|--|--------------------------------|--|
| Month        | Occurrences out of 59 Years | Average Elevation<br>on 30 Jun for 59<br>Years | Occurrences out<br>of 59 Years | Average Elevation<br>on 30 Jun for 59<br>Years |
| Libby *      | 8                           | 2451   | 8                              | 2451   |
| Hungry Horse | 3                           | 3556   | 3                              | 3556   |
| Grand Coulee | 59                          | 1288   | 59                             | 1288   |
| Dworshak     | 17                          | 1594   | 17                             | 1594   |

<sup>\*</sup> Libby refills 58 out of 59 years by 31 Jul with an average elevation of 2458.9 ft for the 59 years in both alternatives.



## MCNARY OUTFLOW MAY-JUNE AVERAGE

